Remarks

Claims 1-6, 10-13 and 18-21 are pending.

Claims 7-9 and 14-17 have been cancelled, without prejudice. Claims 15-17 were previously withdrawn from further consideration. Applicants reserve the right to file one or more continuing applications directed to any or all of the claims which were cancelled, without prejudice.

Claim 1 has been rewritten to include the limitations of original Claims 7-9.

Claim 10 has been rewritten in independent form to include the limitations of original Claims 1 and 7 from which it formerly depended.

Claim 11 has been rewritten in independent form to include the limitations of original Claims 1 and 7 from which it formerly depended.

Claim 19 was amended to recite the third side of the micro-switch and the first and second surfaces of the base portion. See Figures 4 and 5 and the corresponding disclosure.

A Fee Sheet and duplicate copy thereof accompany this Amendment.

The specification has been amended at page 1, lines 4-9, in order to provide the Application Serial No., filing date and patent number of a related case, and to delete the corresponding attorney docket number.

Figures 4 and 5 of the drawings have been amended by providing attached replacement sheets 4/12 and 5/12. Figure 4 shows the lower side 141 of the micro-switch 92 in hidden line drawing. Figure 5 shows the opening 151 in the housing base portion 134 with the opening 148 and pin 150 of the micro-switch 92 being shown in phantom line drawing.

The specification has also been amended at page 13, line 30 through page 14, line 11, in order to be consistent with the amendment to the drawings. This includes the micro-switch lower side 141, the upper side 142 and replaces "securing" with -- secured --. It is submitted that no new matter is presented.

OBJECTIONS TO THE DRAWINGS UNDER 37 CFR 1.83(a)

The Examiner objects to the drawings on the ground that the drawings do not show every feature of the invention specified in the claims. In particular, the Examiner states that "the specific mounting details of the switch being mounted within the base" must be shown.

The attached replacement sheet 4/12 (Figure 4) shows the lower side 141 of the micro-switch 92 in hidden line drawing. Replacement sheet 5/12 (Figure 5) shows the opening 151 in the base portion 134. Figure 4 shows that the micro-switch 92 has a first or

lower side 141 (shown in hidden line drawing); an opposite second or upper side 142, which engages the surface 144 (shown in phantom line drawing) of housing cover portion 136; a third side 146, which is normal to the first and second sides 141,142; an opening 148 extending from the first side 141 to the second side 142; and a pin 150.

The housing base portion 134 includes an opening 151 (Figure 5), a first surface 138 (Figure 4), which engages the first or lower side 141 of the micro-switch 92, and a second surface 140, which is normal to the first surface 138. The third side 146 of the micro-switch 92 engages the second surface 140 of the base portion 134.

The pin 150 engages the micro-switch 92 within the opening 148 thereof and engages the base portion 134 within the opening 151 (Figure 5) thereof.

Therefore, it is submitted that the drawings pass muster under 37 CFR 1.83(a).

OBJECTIONS TO THE SPECIFICATION

The Examiner objects to the disclosure and requires that Applicants provide the Application Serial No. and filing date of the second related case, and that the attorney docket number be deleted.

The amendments to the specification amend page 1, lines 4-9 of the disclosure, in order to provide the Application Serial No., filing date and patent number of the second related case, and to delete the corresponding attorney docket number. Accordingly, it is submitted that the objection to the specification has been overcome.

REJECTIONS UNDER 35 U.S.C § 112, ¶2

The Examiner rejects Claims 2-4 on the ground of being indefinite. The Examiner states that Applicants should clarify the mounting arrangement of the switch within the base and cover of the breaker. The Examiner further states that the specific surfaces and orientations thereof are not clear.

Claim 2 depends from Claim 1 and recites that the housing includes a base portion and a cover portion, and that the switch is a micro-switch having a first side, which engages the base portion, and an opposite second side, which engages the cover portion. It is submitted that the mounting arrangement of the switch within the circuit breaker is clear. The housing of the circuit breaker includes a base portion and a cover portion. The switch is a micro-switch having a first side and an opposite second side. The first side of the micro-switch engages the base portion of the housing of the circuit breaker. The opposite second side of the micro-switch engages the cover portion of the housing of the circuit breaker. Claim 2 does not directly recite any "surface". Accordingly, it is submitted that Claim 2 is definite and passes muster under Section 112, second paragraph.

Claim 3 depends from Claim 2 and recites that the base portion includes a first surface, which engages the first side of the micro-switch, and a second surface, which is normal to the first surface; and that the micro-switch further has a third side, which is normal to the first and second sides, the third side of the micro-switch engaging the second surface of the base portion. It is submitted that the mounting arrangement of the switch within the circuit breaker is clear. The base portion of the housing of the circuit breaker includes a first surface and a second surface, which is normal to the first surface. The first surface engages the first side of the micro-switch. The micro-switch further has a third side, which is normal to the first and second sides of the micro-switch. The third side of the micro-switch engages the second surface of the base portion of the housing. It is submitted that the orientations of the recited surfaces are clear. Therefore, it is submitted that Claim 3 is definite and passes muster under Section 112, second paragraph.

Claim 4 depends from Claim 3 and recites that the base portion has an opening, that the micro-switch has an opening extending from the first side to the second side thereof, and that the micro-switch also has a pin which engages the micro-switch within the opening thereof and engages the base portion within the opening thereof. It is submitted that the mounting arrangement of the switch within the circuit breaker is clear. The base portion of the housing has an opening. The micro-switch has an opening extending from the first side to the second side thereof. The micro-switch also has a pin which engages the micro-switch within the opening thereof and engages the base portion of the housing within the opening thereof. Claim 4 does not directly recite any "surface". Hence, it is submitted that Claim 4 is definite and passes muster under Section 112, second paragraph.

REJECTIONS UNDER 35 U.S.C § 103(a)

The Examiner rejects Claims 1-6 and 18-21 as being unpatentable over Japan 6-251686 (Watanabe et al.) in view of U.S. Patent No. 5,172,086 (Fujihisa et al.). The Examiner also rejects Claims 7-13 as being unpatentable over Watanabe et al. in view Fujihisa et al. and further in view of U.S. Patent No. 4,947,145 (Ohishi et al.).

Since Claim 1 has been rewritten to include the limitations of Claims 7-9, the rejection of Claims 1-6 is dealt with in terms of all three cited references.

Watanabe et al. discloses a low tension breaker including a microswitch 7 having an actuator 71, which is pressed by a point end part 24a of an arm part 24 of a handle 2. In response, a contact mechanism 72 of the microswitch 7 is closed. Power is input through the contact mechanism 72 to an input terminal 81 of a load impedance measuring circuit 8, which is operatively associated with a "closing lock mechanism 9". The measuring

circuit 8 and the closing lock mechanism 9, in the case of a short-circuit condition or overloaded condition, prevent an opening/closing contact 3 from closing.

Fujihisa et al. discloses a remotely controlled relay having two micro-switches 30,31 driven to open and close by a plunger 5 of a bistable polar electromagnetic device 4. An operating lever 28 is pivotally mounted to a base 1 and pivots about a pin 29 when the plunger 5 moves up and down. The operating lever 28 has a handle 28a facing an aperture 1c for manually operating the lever 28. On both sides of the handle 28a is provided a display 28c that indicates ON and OFF states of contacts 11,21. The micro-switches 30 and 31 are mounted on a printed circuit board 27 and have two holes therein through which pins 32 and 33 extend. As shown in Figure 3 of Fujihisa et al., the pins 32 and 33, but not the switches 30,31, are supported by the base 1 and a cover 2. To the pin 33 is pivotally connected an actuating lever 34 driven into pivotal motion by a projection 28d of the operating lever 28, which engages the bifurcation 34a of the actuating lever 34. When the operating lever 28 rotates about the pin 29, a projection 34b engages the actuator 31a of the micro-switch 31 to open and close the switch 31 while the abutment 28c engages the actuator 30a of the micro-switch 30.

Figures 4, 5 and 9 of Fujihisa et al. show circuits, which energize the coil 6 of the electromagnetic device 4 through the micro-switches 30 and 31. Figure 14 of Fujihisa et al. shows another circuit, which energizes the coil 6 of the electromagnetic device 4 through another micro-switch 26.

Ohishi et al. discloses a remote-controlled circuit breaker with an operation handle 50, a pair of fixed contacts 9,16 and a pair of corresponding movable contacts 11,12, respectively, carried by a movable conductor 10. A limit switch 45 and an electromagnetic coil 26 of an electromagnetic unit 200 are connected in series with each other as shown in Figures 9 and 10 of Ohishi et al.. When the operation handle 50 is put in an AUTO-position, the limit switch 45 is actuated and shuts its contact (Figure 10). The electromagnetic unit 200 is therefore operated when the coil 26 is excited. When the operation handle 50 is put in the OFF-position, the limit switch 45 is de-actuated and breaks its contact (Figure 9). Therefore, the electromagnetic unit 200 is not operated even when a voltage is applied to the terminal 42. That is, useless or unnecessary operation of the electromagnetic unit 200 is eliminated, so that the life-time of the electromagnetic unit 200 is extended.

The Examiner states that it would have been obvious that various switching combinations could have been used with the microswitch design of Watanabe et al., as suggested by Fujihisa et al., in order to provide multiple switching paths and operation

control. The Examiner further states that the particular switching sequence used to operate the remote relative to the handle position would have been an obvious design consideration based on the operating environment, safety considerations and intended application. These statements are respectfully traversed as applied to the refined recital of Applicants' claims. It is submitted that there is no teaching, suggestion or motivation in the cited references to render obvious Applicants' recited structures.

Claim 1 recites a circuit breaker comprising: a housing; at least one set of separable contacts including a set of main contacts; an operating mechanism including an operator handle for opening and closing the set of main contacts, the operator handle having a surface, an ON position, a tripped position, and an OFF position, the main contacts being closed in the ON position, being open in the tripped position, and being open in the OFF position; a trip mechanism releasing the operating mechanism to move the operator handle to the tripped position; and a switch including an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of the operator handle of the operating mechanism, the switch also including a contact having a first state corresponding to the actuated position and a second state corresponding to the non-actuated position, the surface of the operator handle engaging and moving the actuator lever to the actuated position in only the ON position of the operator handle, the actuator lever being in the non-actuated position in the OFF position and the tripped position of the operator handle, wherein the at least one set of separable contacts includes the set of main contacts and a set of secondary contacts electrically connected in series with the set of main contacts, wherein the operating mechanism includes a solenoid moving the set of secondary contacts between closed and open positions, and a control circuit selectively energizing the solenoid, wherein the switch is a first switch, wherein the control circuit includes a second switch having a first contact controlling the solenoid, and a second contact electrically connected in series with the contact of the first switch, wherein the contact of the first switch is a normally open contact, with the first state of the normally open contact being closed when the first switch is actuated and the set of main contacts is closed, wherein the second contact of the second switch is closed when the solenoid moves the set of secondary contacts to the closed position thereof, wherein the control circuit is adapted to receive a voltage and apply the same to the second contact of the second switch, and wherein the contact of the first switch is adapted to output the voltage when the set of main contacts and the set of secondary contacts are both closed.

Claim 1 recites a set of secondary contacts electrically connected in series with a set of main contacts, a solenoid moving the set of secondary contacts between closed and

open positions, and a control circuit selectively energizing the solenoid. A first switch includes an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of an operating mechanism operator handle. The first switch also includes a normally open contact having a first state corresponding to the actuated position and a second state corresponding to the non-actuated position. A control circuit includes a second switch having a first contact controlling the solenoid, and a second contact electrically connected in series with a normally open contact of a first switch. The first state of the normally open contact is closed when the first switch is actuated and the set of main contacts is closed. The second contact of the second switch is closed when the solenoid moves the set of secondary contacts to the closed position thereof. The control circuit is adapted to receive a voltage and apply the same to the second contact of the second switch. In this manner, the normally open contact of the first switch is adapted to ***output*** the ***voltage when*** the ***set of main contacts and*** the ***set of secondary contacts are both closed***.

An example of this structure is shown in Figure 6 of the application.

Watanabe et al., which discloses the input of power through a microswitch contact mechanism 72 to an input terminal 81 of a load impedance measuring circuit 8 that is operatively associated with a "closing lock mechanism 9", does not teach or suggest this refined structure of Claim 1.

Fujihisa et al., which discloses circuits to energize the coil 6 of the electromagnetic device 4 through micro-switches 30,31,26, adds nothing to Watanabe et al. in this regard.

Ohishi et al., which discloses a limit switch 45 to disable an electromagnetic unit 200, in order to eliminate useless or unnecessary operation thereof, adds nothing to Watanabe et al. and Fujihisa et al. in this regard.

The references, whether taken alone or in combination, do not teach or suggest a circuit breaker including a set of secondary contacts electrically connected in series with a set of main contacts, a normally open contact being closed when a first switch is actuated and the set of main contacts is closed, a second contact of a second switch being electrically connected in series with such normally open contact and being closed when a solenoid moves the set of secondary contacts to the closed position thereof, and such normally open contact of the first switch being adapted to output a voltage when the set of main contacts and the set of secondary contacts are both closed. Accordingly, for the above reasons, it is submitted that Claim 1 patentably distinguishes over the references.

Claims 2-6 depend directly or indirectly from Claim 1 and patentably distinguish over the references for the same reasons. Claims 2 and 3 further distinguish over the references for some of the reasons discussed below in connection with Claims 18 and 21, respectively.

Claim 10, as amended, is an independent claim which recites, *inter alia*, a circuit breaker comprising: a housing; at least one set of separable contacts including a set of main contacts; an operating mechanism including an operator handle for opening and closing the set of main contacts, the operator handle having a surface, an ON position, a tripped position, and an OFF position, the main contacts being closed in the ON position, being open in the tripped position, and being open in the OFF position; a trip mechanism releasing the operating mechanism to move the operator handle to the tripped position; and a switch including an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of the operator handle of the operating mechanism, the switch also including a contact having a first state corresponding to the actuated position and a second state corresponding to the non-actuated position, the surface of the operator handle engaging and moving the actuator lever to the actuated position in only the ON position of the operator handle, the actuator lever being in the non-actuated position in the OFF position and the tripped position of the operator handle; wherein the at least one set of separable contacts includes the set of main contacts and a set of secondary contacts electrically connected in series with the set of main contacts; wherein the operating mechanism includes a solenoid moving the set of secondary contacts between closed and open positions, and a control circuit selectively energizing the solenoid; wherein the switch is a first switch; and wherein the control circuit includes a second switch having a first contact controlling the solenoid and a second contact electrically connected to the contact of the first switch; wherein the second contact of the second switch and the contact of the first switch are adapted to receive a voltage; wherein the second contact of the second switch has an output adapted to provide a feedback voltage external to the housing when the set of secondary contacts is closed; and wherein the contact of the first switch has an output adapted to provide a feedback voltage external to the housing when the set of main contacts is closed.

Claim 10 recites a set of secondary contacts electrically connected in series with a set of main contacts, a solenoid moving the set of secondary contacts between closed and open positions, and a control circuit selectively energizing the solenoid. A first switch includes an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of an operating mechanism operator handle. The first

switch also includes a contact having a first state corresponding to the actuated position and a second state corresponding to the non-actuated position. A control circuit includes a second switch having a first contact controlling the solenoid, and a second contact. The second contact of the second switch and the contact of the first switch are adapted to receive a voltage. The second contact of the second switch has an output adapted to provide a feedback voltage external to the housing when the set of secondary contacts is closed, and the contact of the first switch has an output adapted to provide a feedback voltage external to the housing when the set of main contacts is closed.

An example of this structure is shown in Figure 7 of the application.

Watanabe et al., which discloses the input of power through a microswitch contact mechanism 72 to an input terminal 81 of a load impedance measuring circuit 8 that is operatively associated with a "closing lock mechanism 9", does not teach or suggest this refined structure of Claim 10.

Fujihisa et al., which discloses circuits to energize the coil 6 of the electromagnetic device 4 through micro-switches 30,31,26, adds nothing to Watanabe et al. in this regard.

Ohishi et al., which discloses a limit switch 45 to disable an electromagnetic unit 200, in order to eliminate useless or unnecessary operation thereof, adds nothing to Watanabe et al. and Fujihisa et al. in this regard.

The references, whether taken alone or in combination, do not teach or suggest a circuit breaker including a set of secondary contacts electrically connected in series with a set of main contacts, a contact being closed when a first switch is actuated and the set of main contacts is closed, a second contact of a second switch being closed when a solenoid moves the set of secondary contacts to the closed position thereof, the second contact of the second switch and the contact of the first switch being adapted to receive a voltage, the second contact of the second switch having an output adapted to provide a feedback voltage external to the housing when the set of secondary contacts is closed, and the contact of the first switch having an output adapted to provide a feedback voltage external to the housing when the set of main contacts is closed. In this manner, two feedback voltages are provided external to the housing for the set of secondary contacts being closed and for the set of main contacts being closed. Therefore, for the above reasons, it is submitted that Claim 10 patentably distinguishes over the references.

Claim 11, as amended, is an independent claim which recites, *inter alia*, a circuit breaker comprising: a housing; at least one set of separable contacts including a set of

main contacts; an operating mechanism including an operator handle for opening and closing the set of main contacts, the operator handle having a surface, an ON position, a tripped position, and an OFF position, the main contacts being closed in the ON position, being open in the tripped position, and being open in the OFF position; a trip mechanism releasing the operating mechanism to move the operator handle to the tripped position; and a switch including an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of the operator handle of the operating mechanism, the switch also including a contact having a first state corresponding to the actuated position and a second state corresponding to the non-actuated position, the surface of the operator handle engaging and moving the actuator lever to the actuated position in only the ON position of the operator handle, the actuator lever being in the non-actuated position in the OFF position and the tripped position of the operator handle; wherein the at least one set of separable contacts includes the set of main contacts and a set of secondary contacts electrically connected in series with the set of main contacts; wherein the operating mechanism includes a solenoid moving the set of secondary contacts between closed and open positions, and a control circuit selectively energizing the solenoid; wherein the switch is a first switch; and wherein the control circuit includes a contact electrically connected in series with the contact of the first switch, a first node electrically connected to the contact of the first switch and to the contact of the control circuit, a second node, a first circuit element electrically connected between the contact of the first switch and the second node, and a second circuit element electrically connected between the contact of the control circuit and the second node.

Claim 11 recites a set of secondary contacts electrically connected in series with a set of main contacts, a solenoid moving the set of secondary contacts between closed and open positions, and a control circuit selectively energizing the solenoid. A first switch includes an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of an operating mechanism operator handle. The first switch also includes a contact having a first state corresponding to the actuated position and a second state corresponding to the non-actuated position. A control circuit selectively energizes the solenoid and includes a contact electrically connected in series with the contact of the first switch. A first node is electrically connected to the contact of the first switch and to the contact of the control circuit. A first circuit element is electrically connected between the contact of the first switch and a second node of the control circuit. A second circuit element is electrically connected between the contact of the control circuit and the second node.

An example of this structure is shown in Figure 9 of the application.

Watanabe et al., which discloses the input of power through a microswitch contact mechanism 72 to an input terminal 81 of a load impedance measuring circuit 8 that is operatively associated with a "closing lock mechanism 9", does not teach or suggest this refined structure of Claim 11.

Fujihisa et al., which discloses circuits to energize the coil 6 of the electromagnetic device 4 through micro-switches 30,31,26, adds nothing to Watanabe et al. in this regard.

Ohishi et al., which discloses a limit switch 45 to disable an electromagnetic unit 200, in order to eliminate useless or unnecessary operation thereof, adds nothing to Watanabe et al. and Fujihisa et al. in this regard.

The references, whether taken alone or in combination, do not teach or suggest a circuit breaker including a set of secondary contacts electrically connected in series with a set of main contacts, a contact being closed when a first switch is actuated and the set of main contacts is closed, a control circuit selectively energizing a solenoid and including a contact electrically connected in series with the contact of the first switch, a first node electrically connected to the contact of the first switch and to the contact of the control circuit, a first circuit element electrically connected between the contact of the first switch and a second node of the control circuit, and a second circuit element electrically connected between the contact of the control circuit and the second node. Hence, for the above reasons, it is submitted that Claim 11 patentably distinguishes over the references.

Claims 12 and 13 depend directly or indirectly from Claim 11 and patentably distinguish over the references for the same reasons. Furthermore, Claim 12 recites that the first circuit element is a first resistor having a first resistance value, and that the second circuit element is a second resistor having a different second resistance value. As set forth in the specification, at page 15, lines 24-28, resistor 182 has a first resistance value and resistor 184 has a different second resistance value. In this manner, four unique status signals may be provided at the status terminals 132 based upon the four possible states of the separable contacts 5,11 (*e.g.*, OFF/OFF, OFF/ON, ON/OFF, and ON/ON). Since the references neither teach nor suggest the refined recital of Claim 11, they clearly neither teach nor suggest these additional limitations which further distinguish over the references.

Furthermore, Claim 13 recites that the second resistance value is about two times the first resistance value. Since the references neither teach nor suggest the refined

recital of Claims 11 and 12, they clearly neither teach nor suggest these additional limitations which further distinguish over the references.

Claim 18 is an independent claim which recites, *inter alia*, a circuit breaker comprising: a molded housing having a base portion and a cover portion; separable contacts; an operating mechanism including an operator handle for opening and closing the separable contacts, the operator handle having a surface, an ON position, a tripped position, and an OFF position, the separable contacts being closed in the ON position, being open in the tripped position, and being open in the OFF position; a trip mechanism releasing the operating mechanism to move the operator handle to the tripped position; and a micro-switch including an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of the operator handle of the operating mechanism, the switch also including a contact having a first state corresponding to the actuated position and a second state corresponding to the non-actuated position, the surface of the operator handle engaging and moving the actuator lever to the actuated position in the ON position of the operator handle, the actuator lever being in the non-actuated position in the OFF position and the tripped position of the operator handle, the micro-switch having a first side, which engages the base portion of the molded housing, and an opposite second side, which engages the cover portion of the molded housing.

Claim 18 recites a molded housing having a base portion and a cover portion, and a micro-switch including an actuator lever movable between an actuated position and a non-actuated position and adapted to engage a surface of an operating mechanism operator handle. The micro-switch further includes a first side, which engages the base portion of the molded housing, and an opposite second side, which engages the cover portion of the molded housing. It is submitted that this refined structure provides a secure mounting arrangement for the micro-switch, which has opposing first and second sides, which respectively engage the base and cover portions of the molded housing, and which also has an actuator lever adapted to engage the surface of the operating mechanism operator handle.

Watanabe et al., which shows block diagrams of a low tension breaker including an outline 11 and a microswitch 7 having an actuator 71 that is pressed by a point end part 24a of an arm part 24 of a handle 2, does not teach or suggest this refined structure.

Fujihisa et al., which shows (Figure 3) micro-switches 30,31 supported by a pin 32 and a printed circuit board 27, adds nothing to Watanabe et al. in this regard.

Accordingly, for the above reasons, it is submitted that Claim 18 patentably distinguishes over the references.

Claims 19 and 20 depend from Claim 18 and patentably distinguish over the references for the same reasons.

Furthermore, Claim 19, as amended, recites that the micro-switch further has a third side, which is normal to the first and second sides of the micro-switch; and that the base portion of the molded housing includes a first surface, which engages the first side of the micro-switch, and a second surface, which is normal to the first surface and which engages the third side of the micro-switch. It is submitted that this refined structure provides a secure mounting arrangement for the micro-switch, which has opposing first and second sides that respectively engage a first surface of the base portion and the cover portion of the molded housing; which also has an actuator lever adapted to engage the surface of the operating mechanism operator handle; and which also has a third side, normal to the first and second sides, that engages a second surface, normal to the first surface, of the base portion. Since the references do not teach or suggest the refined recital of Claim 18, they clearly neither teach nor suggest these additional limitations which further patentably distinguish over the references.

Claim 20 is not separately asserted to be patentable except in combination with Claim 18 from which it depend.

Claim 21 is an independent claim which recites, *inter alia*, a circuit breaker comprising: separable contacts; an operating mechanism including an operator handle for opening and closing the separable contacts, the operator handle having a surface, an ON position, a tripped position, and an OFF position, the separable contacts being closed in the ON position, being open in the tripped position, and being open in the OFF position; a trip mechanism releasing the operating mechanism to move the operator handle to the tripped position; a micro-switch including a first side, an opposite second side, and an actuator lever movable between an actuated position and a non-actuated position and adapted to be actuated by the surface of the operator handle of the operating mechanism, the switch also including a contact having a first state corresponding to the actuated position and a second state corresponding to the non-actuated position, the contact having one of the first and second states in the ON position of the operator handle, and having the other of the first and second states in the OFF position and the tripped position of the operator handle; and a molded housing having a base portion, which engages the first side of the micro-switch, and a cover portion, which engages the second side of the micro-switch, the base portion and the cover portion of the molded housing defining a single compartment, which houses the separable contacts, the operating mechanism, the trip mechanism and the micro-switch.

Claim 21 recites that a molded housing has a base portion, which engages a first side of a micro-switch, and a cover portion, which engages a second side of the micro-switch, with the base portion and the cover portion of the molded housing defining a single compartment, which houses the separable contacts, the operating mechanism, the trip mechanism and the micro-switch.

Watanabe et al., which shows block diagrams of a low tension breaker including an outline 11 and a microswitch 7 having an actuator 71 that is pressed by a point end part 24a of an arm part 24 of a handle 2, does not teach or suggest this refined structure.

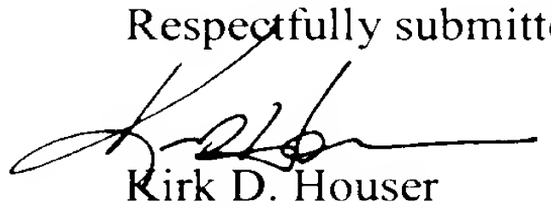
Fujihisa et al., which shows (Figure 3) micro-switches 30,31 supported by a pin 32 and a printed circuit board 27, which shows (Figure 1) electromagnet device 4 in a compartment, which shows (Figure 1) contacts 11,21 in another compartment, and which shows (Figure 1) microswitches 30,31 and operating lever 28 in another compartment, adds nothing to Watanabe et al. in this regard.

Claim 21 patentably distinguishes over the references for similar reasons as discussed above in connection with Claim 18.

Claim 21 further recites that the base portion and the cover portion of the molded housing define a single compartment, which houses the separable contacts, the operating mechanism, the trip mechanism and the micro-switch. It is submitted that this simplifies and reduces the cost of the recited molded housing. Hence, it is submitted that Claim 21 further patentably distinguishes over the references.

Reconsideration and early allowance are requested.

Respectfully submitted,



Kirk D. Houser
Registration No. 37,357
Attorney for Applicants

(412) 566-6083